



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ³ : F24F 7/02; E04D 3/40	A1	(11) International Publication Number: WO 84/ 02970 (43) International Publication Date: 2 August 1984 (02.08.84)
(21) International Application Number: PCT/SE84/00017 (22) International Filing Date: 19 January 1984 (19.01.84) (31) Priority Application Number: 8300402-8 (32) Priority Date: 27 January 1983 (27.01.83) (33) Priority Country: SE (71) Applicant: DOBEL AB [SE/SE]; S-781 84 Borlänge (SE). (72) Inventors: INGVARSSON, Lars, Ingvar ; Myntgatan 3, S-781 62 Borlänge (SE). EIBRANT, Karl, Owe ; Box 506, S-770 70 Långshyttan (SE). (74) Agent: WÄRULF, Olov; Svenskt Stål, S-613 01 Oxelösund (SE). (81) Designated States: AT (European patent), BE (European patent), CH (European patent), DE (European patent), DK, FR (European patent), GB (European patent), LU (European patent), NL (European patent), NO, SE (European patent).		Published <i>With international search report. In English translation (filed in Swedish).</i>
(54) Title: VENTILATOR FOR VENTILATED ROOFS <div data-bbox="393 1205 1396 1646" data-label="Image"> </div> (57) Abstract <p>A ventilator at the ridge of a building roof intended to allow external air to escape, which as a result of natural draft flows from the eaves up towards the ridge of the roof on the underside of profiled run-off panels (1). It consists substantially of, on the one hand, a cover plate (8) consisting of two flanks joining over an opening (2) between opposite run-off plates (1) at the ridge, and on the other hand of a cap (3) above the said cover plate (8). Between the cover plate (8) and cap (3) is a space. The cap (3) is perforated at its lower edges extending over opposite run-off panels (1). The cover plate (8) has also perforated rows at right angles below the perforations of cap (3) as well as a perforation at the top in the area of the ridge. At the upper ends of the run-off panels opposite the ridge of the roof is provided a seal between the said panels and the cover plate (8).</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	KR	Republic of Korea
AU	Australia	LI	Liechtenstein
BE	Belgium	LK	Sri Lanka
BG	Bulgaria	LU	Luxembourg
BR	Brazil	MC	Monaco
CF	Central African Republic	MG	Madagascar
CG	Congo	MR	Mauritania
CH	Switzerland	MW	Malawi
CM	Cameroon	NL	Netherlands
DE	Germany, Federal Republic of	NO	Norway
DK	Denmark	RO	Romania
FI	Finland	SD	Sudan
FR	France	SE	Sweden
GA	Gabon	SN	Senegal
GB	United Kingdom	SU	Soviet Union
HU	Hungary	TD	Chad
JP	Japan	TG	Togo
KP	Democratic People's Republic of Korea	US	United States of America

VENTILATOR FOR VENTILATED ROOFS

TECHNICAL SCOPE

The present invention relates to a ventilator intended for removal at the top of air from below a ventilated roof covered with preferably trapezoidally shaped run-off panels.

TECHNOLOGICAL BACKGROUND

By way of external roof covering on buildings etc. use is frequently made at present of metal plates in order to prevent the penetration of rain and snow from above. These "run-off panels" are often corrugated with ridges and channels in the direction of the roof's inclination. Towards the top the inclined areas of the roof meet in ridges, for instance in the case of pitched roofs and hipped roofs. It is desirable for the said run-off panels to be maintained in one way or another at or close to the temperature of the external air. The principal reason for this consists in the fact that snow on the roof must not melt and the water therefrom must not run down and freeze to ice at the base of the roof. If this happens accidents may be caused as a result of falling bits of ice. The melt water may also accumulate in front of these walls of ice and penetrate the house through the joints between the roof panels.

A good method of maintaining the roof panels at a temperature close to that of the external air consists in allowing external air to rise by natural draft below the roof panels and to be allowed to escape at the top in the ridge area. It has however proved difficult to achieve simple and cheap ventilation in the ridge area, enabling such air to escape while at the same time preventing rain and snow from being blown under the roof covering while likewise eliminating any possibility of birds and insects getting in the causing damage.

It is the object of the present invention to solve these problems. This object has been achieved by means of a ventilator designed to permit air to escape from a building, whereby the said roof is provided with a covering of run-off panels extending from the respective eaves of the roof upward towards a ridge, with an opening provided along the extent of the ridge. The ventilator



comprises a cap extending along the ridge of the roof and covering the opening between the roof sections with the aid of a cover plate so arranged as to cover the opening below the cap and above the roof panels. The cap is preferably provided with a perforation
5 extending at least along its longitudinal sides. Both the cap and the cover plate have two flanks meeting in an apex along the centre line of the ridge of the roof. The cover plate may be provided with a perforation both at its apex and along its longitudinal sides.

The ventilator in accordance with the invention is especially
10 suitable with roof coverings consisting of corrugated panels, the channels of which extend at right angles in respect of the ridge of the roof, whereby every channel of the corrugated panels is provided with a sealed face along the ridge opening. The sealing is brought about preferably by beating the corrugated plate so as to achieve a
15 wall along the opening or by means of strips of compressible material such as KORUSSELL.

The cover plate is located along the ridge opening so that its perforation along the longitudinal sides is above the run-off panels. As a result condensation water forming on the underside of the cap as
20 well as rain and snow water penetrating through perforations in the cap can drop down onto the cover plate and run down through perforations along the longitudinal sides and down onto the run-off panels.

The cap is so located that its perforation is substantially above the cover plate perforation along the longitudinal sides.
25 The perforations in the cap and cover plate respectively consist of holes so small that relatively large insects cannot pass through. This also ensures that the ventilator does not permit birds to enter the building through the ventilator.

The invention is described in detail in the subsequent claims,
30 through an embodiment and in the attached drawings whereby

figure 1 shows part of a pitched roof seen at an angle from above;

figure 2 shows a cross-section through the ridge of the roof shown in figure 1;

35 figure 3 shows a section of the roof in accordance with figure 2



seen from above.

EMBODIMENT

The pitched roof in accordance with figure 1 is provided with a covering 1 of corrugated run-off panels extending from the
5 respective eaves up towards the ridge of the roof where an opening, 2, is provided along the extend of the ridge. The ventilator in accordance with the invention comprises a cup, 3, extending along the ridge of the roof and covering the opening, 2. The cap, 3, comprises two plane flanks, 4, each of which is parallel with the
10 respective section of the roof and provided along the longitudinal sides with a substantially vertical wall, 5, linking the respective flank, 4, with a base, 6, which in turn supports the cap, 3. The cap, 3, is provided with a perforation, 7, extending along the longitudinal side of the respective flank, 4.

15 A cover plate, 8, is so arranged as to cover the opening, 2, below the cap, 3, whereby the cover plate, 8, consists of two plane flanks, 9, each of which is parallel with the respective flank, 4, of the cap, 3, and abuts the respective section of the roof. The cover plate, 8, is provided on the one hand with a perforation, 10, extending
20 in a zone along its centre line and partly with a perforation, 11, extending in a zone along its longitudinal side. The respective side perforation, 11, of the cover plate, 8, is arranged vertically below the respective perforation, 7, of the cap, 3, and on that part of the plane flank, 9, which is above the roof covering, 1.

25 The roof covering, 1, of corrugated steel panels comprises channels extending at right angles to the ridge of the roof and is provided with area beaten up so as to form a sealing wall, 10, on either roof section along the opening, 2.

The entire perforation consists of 3 mm dia. holes at 6 mm centres.

30 With this arrangement air flows from outside along the underside of the roof covering from the eaves up to the ridge of the roof and out through the central perforation in the cover plate and further through the perforation in the cap along its longitudinal sides following the path indicated by the fully drawn arrow lines in figure 2.



Any incoming rain and snow water or condensate from the ventilator runs off along the roof covering following the path indicated by the dashed arrowed lines in figure 2.

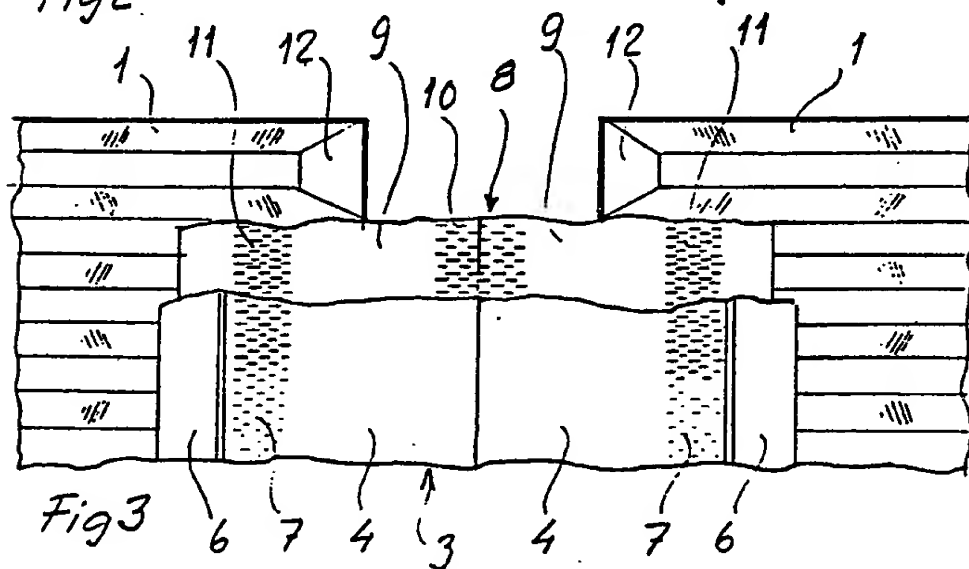
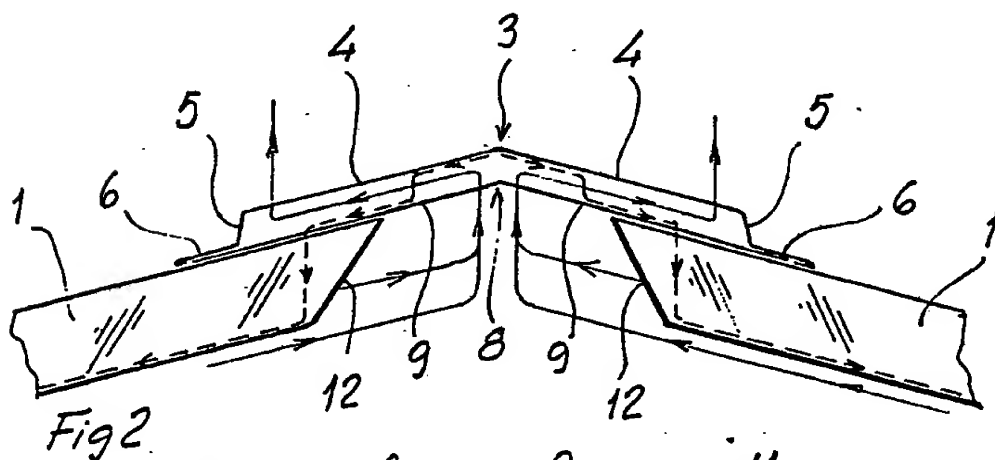
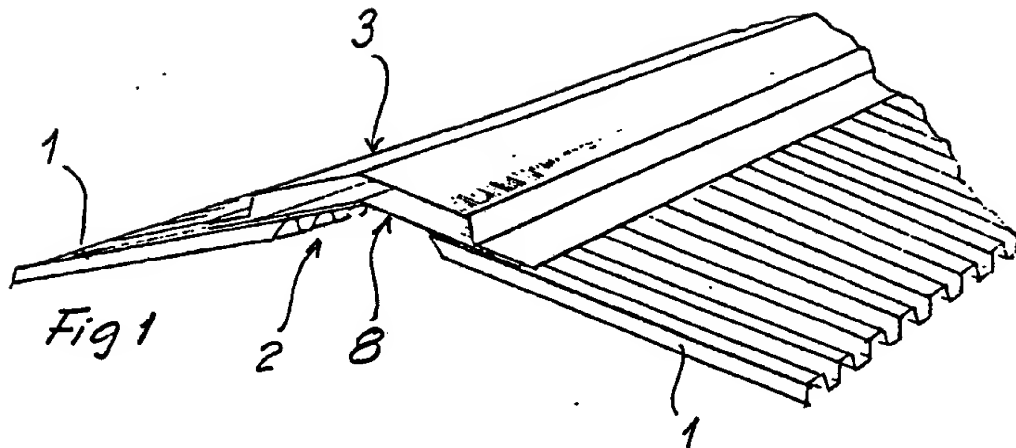


PATENT CLAIM

A ventilator at the ridge of a building roof intended to allow external air to escape, which as a result of natural draft passes from the eaves up towards the ridge of the roof on the underside of the profiled run-off panel (1) characterised in that on the one hand a cover plate (8) is provided over a design opening (2) between opposite run-off panels (1), the said cover plate consisting of two flanks (9) joining at the ridge of the roof, whereby a row of perforations is produced extending down over and past end seals (12) of adjacent run-off panels (1), with a row of perforations (11) being provided also in this area, and on the other hand by a cap (3) with two flanks (4) joining at the ridge of the roof on top and at a distance from the cover plate (8) which also extends downward over the run-off panels and ends in a downward facing wall (5) and a base (6) in the lowest part of the cover plate (8), the said cap having perforations in the area above the lower rows of perforations (11) of the cover plate (8).



1/1

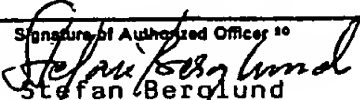


SUBSTITUTE SHEET



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE84/00017

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) *		
According to International Patent Classification (IPC) or to both National Classification and IPC 3		
F 24 F 7/02; E 04 D 3/40		
II. FIELDS SEARCHED		
Minimum Documentation Searched *		
Classification System	Classification Symbols	
IPC 3	F 24 F 7/00-7/02; E 04 D 1/30, 3/40, 13/16; F 23 L 17/00-17/16	
US C1	52: 90, 277, 278, 712, 713; 98: 42, 61, 66, 83	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched *		
SE, NO, DK, FI classes as above		
III. DOCUMENTS CONSIDERED TO BE RELEVANT 14		
Category *	Citation of Document, 16 with indication, where appropriate, of the relevant passages 17	Relevant to Claim No. 18
Y	DE, B2, 2 430 959 (ALCAN ALUMINIUMWERKE GMBH) 9 August 1979	1
A	AT, B, 323 376 (ASSMAN KUNST-STOFFINDUSTRIE GESELLSCHAFT) 10 July 1975	1
Y	AT, B, 365 270 (G LAIMER) 28 December 1981	1
Y	US, A, 835 966 (F LYSTER) 13 November 1906	1
Y	US, A, 2 868 104 (K A HONHOLT, J T WALKER) 13 January 1959	1
A	CA, A, 1 039 557 (L L WALLEE) 3 October 1978	1
A	CA, A, 1 065 670 (J L L WALLEE) 6 November 1979	1
<p>* Special categories of cited documents: 19</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the International filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"A" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search *	Date of Mailing of this International Search Report *	
1984-03-22	1984-04-03	
International Searching Authority *	Signature of Authorized Officer 20	
Swedish Patent Office	 Stefan Berglund	

K.L.